Sperry Marine

Sperry Marine A/S · Højnæsvej 46 · DK-2610 Rødovre · Fax: 36 72 21 20 · Telex: 19526 sperry dk · Tlf.: 36 72 20 77

Summary of Final DNV Review of Sperry Marine ANTS for DNV W1 Type Certification
June 28, 1996 Copenhagen Denmark

The final outstanding items for review were demonstrated successfully. These included:

- Target Numbering on the VMS
- Autopilot achieving turn rate order in AUTO mode, even with rudder limit set
- A one-leg temporary voyage plan will cause alarm if in violation of danger area
- The Chart Info Window correctly displays chart datum offsets
- The CursorTail method of displaying local datum offsets
- The DNV Conning display.

The only change required is described in the following:

On the DNV CID page, the section in the lower right of screen displays information that pertains to the next waypoint of a voyage plan - that is, the upcomming waypoint. The information in this section is all updated at the start of a waypoint turn. For example, when the turn at waypoint 3 is begun, the information in this section is updated to show the information for waypoint 4. This is acceptable and desireable. However, the one exception to this is that the RAD field, which indicates the planned turn radius for the waypoint , is NOT updated until the turn is COMPLETE. That is, in the prior example, all information is updated (to show the values for waypoint 4) at the START of the turn at waypoint 3, except for RAD which is not updated with the turn radius for waypoint 4 until the turn is COMPLETE and the plan state changes from Turning to Sailing. All information in this area is for the upcomming waypoint and should be updated at the same time for the correct waypoint.

The change is required to be implemented as soon as possible, but will not delay final Certification.

Several other minor changes were suggested (and noted) in regard to the appearance and content of the CID display. These are to be considered recomendations and do not affect the certification.

All tests were satisfactorily completed and all outstanding requirements demonstrated. The Type Approval is hereby granted and the formal Certificate will be forwarded via the New Jersey DNV office.

Olaf Gundersrud
June 28, 1996

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-6113
This Certificate consists of 3 pages

This is to certify that the
AUTOMATIC NAVIGATION AND TRACK-KEEPING SYSTEM, ANTS

with type designation(s)
VISION 2100 VT

Manufactured by
SPERRY MARINE INC.
1070 SEMINOLE TRAIL,
CHARLOTTESVILLE, VA 22901, U.S.A.

is found to comply with
DET NORSKE VERITAS' RULES FOR CLASSIFICATION OF SHIPS AND MOBILE OFFSHORE UNITS

Application

Directional stable ships less than 150,000 GRT complying with IMO Res. A.751(17)

Place and date
Høvik, 07. August 1996
for Det Norske Veritas AS

Olaf Gundersrud
Head of Section

DET NORSKE VERITAS * 1864 *

Local Office
DNV New Jersey

This Certificate is valid until
30. June 1998

Arvid Inge Stiansen
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

Cert. No.: A-6113
File No.: 844.70

Product description

MK37 VT Gyro compass
ADG 3000 VT Autopilot
SRD 331 Speed log
or SRD421 S Dual-axis speed log
Trimble NT200D Differential GPS receiver
RASCAR VT
Voyage Management System *consisting of*
- Navigation Station
- Conning Station
- Planning Station

SeaNET

Software modules

SeaNET Software
VMS-VT ver.1812354G(or later)
NWS ver.1812354G(or later)
CID ver.1812354G(or later)

Application/Limitation

The design approval encompass system engineering including integration, interface and track-keeping performance.

The approval is based on the assumption that all sub-systems listed above is individually type approved in compliance with IEC945 and pertinent performance standards. If a sub-system does not have a valid certificate it is subject to normal case-by-case design review and commissioning tests on board. If a sub-system is replaced by another similar type approved system the interface is subject to normal case-by-case design review and commissioning tests on board.

The system installation is to be tested on board according to the following commissioning test procedure :

03956-SCM-25379 Validation Procedure for the ANTS

Type Approval documentation

- DWG No. 1820416 Automatic Navigation and Track-keeping System, Block Diagram
- 03956-SCM-25380 ANTS List of Equipment

- 03956 SCM 25266 Rev A Software Requirements Specification for the UNS of VMS-VT
- P/N 200-26658 Rev B Software Requirements Specification for the Track-Keeping Algorithm of the VMS-VT
- JA26-5883 Rev C June 1996 Operators Manual for the VMS-VT
- JA25-5281 Interfacing, installation and service of the VMS 1992
- 03956 SCM-25233 Software Test Plan for Ver.2.1 of VMS-VT
- 03956 SCM 25288 Rev.G config.ini for VMS-VT

Tests carried out

Tests according to 03956 SCM-25233 Software Test Plan for Ver.2.1 of VMS-VT:
- Failure simulation conducted to evaluate error detection and pertinent fail-to-safe mode
- Functional tests conducted to evaluate the quality assurance of Voyage Planning
- Performance tests of the track-keeping software
- Functional tests of interface and communication protocol

Marking of product

See product description above.

Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type approval is complied with and that no alterations are made to the product design or choice of sub-systems.

The main elements of the survey to be dealt with:
- Ensure that type approved documentation is available.
- Ensure that sub-systems used comply with type approved drawings and referenced list of equipment.
- Review design, performance and production process with respect to possible changes, in order to ensure compliance with the type approved documentation and referenced specifications.
- Ensure traceability between manufacturer's product marking and the DNV Type Approval Certificate.
- Ensure that a copy of "System Investigation Report, (SIR)" have been submitted to DNV for all software changes made to the VMS-VT ver. 1812354G during the certificate validation period.

Survey to be performed once a year.

END OF CERTIFICATE

Sperry Marine
We Navigate Solutions.

Go Back

Type Approval Certificate for: NSI

Issuing Country: Germany
Issuing Agency: Bundesamt für Seeschiffahrt und Hydrographie
Date of Issue: 12 September 2007
Notes: Certificate No. BSH 4612/0040380/07 Expiration: 09-11-2012

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Germanischer Lloyd

TYPE APPROVAL CERTIFICATE

No. 99427 - 97 HH

This is to certify, that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

COMPANY	Sperry Marine Inc. 1070 Seminole Trail Charlottesville ,Virginia 22906, USA
PRODUCT DESCRIPTION	Voyage Management System
TYPE	VMS-VT
ENVIRONMENTAL CATEGORY	C
TECHNICAL DATA / RANGE OF APPLICATION	Voyage Management System consisting of: - Computer HP Model D4214N with Mariner Kit MRP4030: 1820621-VAR - Monitor 17" Display D2818A 21" Display ICD 321 E20FMA/C: 1813462-VAR 26" Display 9029X: 1812710-VAR - Software Modules SeaNET Interface VMS-VT Vers. 2.1: 1812354 rev. 6
TEST STANDARD	IEC 945 (1996) Regulations for the Use of Computers and Computer Systems
DOCUMENTS	Operators Manual JA25-5883, Rev. J (February 1997) Test Reports JA330-6543 (June 1997); JA330-6281-2 (June 1997)
REMARKS	None

TYPE APPROVAL SYMBOL

VALID UNTIL : 23.11.2002

PLACE : Hamburg
DATE : 24.11.1997
PAGE 1 OF 1

File No. : LF/09

Germanischer Lloyd

i.V. H. Rönnecke H. Kuhn

This certificate is issued on the basis of "Regulation for the Performance of Type Tests, Part 0, Procedure".

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-6937
This Certificate consists of 3 pages

This is to certify that the
AUTOMATIC NAVIGATION AND TRACK-KEEPING SYSTEM, ANTS

with type designation(s)
VISION 2100 VT

Manufactured by
SPERRY MARINE INC.
VIRGINIA 22901,
U.S.A.

is found to comply with
DET NORSKE VERITAS' RULES FOR CLASSIFICATION OF SHIPS AND MOBILE OFFSHORE UNITS

Application

Directional stable ships less than 150,000 GRT complying with IMO Res. A.751(17)

Place and date
Høvik, 24. June 1998
for Det Norske Veritas AS

for Per Martinsen
Head of Section

Local Office
DNV New Jersey

This Certificate is valid until
30. June 1999

for Olaf Gundersrud
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

Product description

MK37 VT Gyro compass
ADG 3000 VT Autopilot
SRD 331 Speed log
or SRD421 S Dual-axis speed log
Trimble NT200D Differential GPS receiver
RASCAR VT
Voyage Management System *consisting of*
- Navigation Station
- Conning Station
- Planning Station

SeaNET

Software modules

SeaNET Software
VMS-VT ver.1812354G(or later)
NWS ver.1812354G(or later)
CID ver.1812354G(or later)

Application/Limitation

The design approval encompass system engineering including integration, interface and track-keeping performance.

The approval is based on the assumption that all sub-systems listed above is individually type approved in compliance with IEC945 and pertinent performance standards. If a sub-system does not have a valid certificate it is subject to normal case-by-case design review and commissioning tests on board. If a sub-system is replaced by another similar type approved system the interface is subject to normal case-by-case design review and commissioning tests on board.

The system installation is to be tested on board according to the following commissioning test procedure :

03956-SCM-25379 Validation Procedure for the ANTS

Type Approval documentation

- DWG No. 1820416 Automatic Navigation and Track-keeping System, Block Diagram
- DWG No. 03956-SCM-25380 ANTS List of Equipment
- 03956 SCM 25266 Rev A Software Requirements Specification for the UNS of VMS-VT
- P/N 200-26658 Rev B Software Requirements Specification for the Track-Keeping

Algorithm of the VMS-VT
- JA26-5883 Rev C June 1996 Operators Manual for the VMS-VT
- JA25-5281 Interfacing, installation and service of the VMS 1992
- 03956 SCM-25233 Software Test Plan for Ver.2.1 of VMS-VT
- 03956 SCM 25288 Rev.G config.ini for VMS-VT

Tests carried out

Tests according to 03956 SCM-25233 Software Test Plan for Ver.2.1 of VMS-VT:
- Failure simulation conducted to evaluate error detection and pertinent fail-to-safe mode
- Functional tests conducted to evaluate the quality assurance of Voyage Planning
- Performance tests of the track-keeping software
- Functional tests of interface and communication protocol

Marking of product

See product description above.

Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type approval is complied with and that no alterations are made to the product design or choice of sub-systems.

The main elements of the survey to be dealt with:
- Ensure that type approved documentation is available.
- Ensure that sub-systems used comply with type approved drawings and referenced list of equipment.
- Review design, performance and production process with respect to possible changes, in order to ensure compliance with the type approved documentation and referenced specifications.
- Ensure traceability between manufacturer's product marking and the DNV Type Approval Certificate.
- Ensure that a copy of "System Investigation Report, (SIR)" have been submitted to DNV for all software changes made to the VMS-VT ver. 1812354G during the certificate validation period.

Survey to be performed once a year.

END OF CERTIFICATE

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-7589
This Certificate consists of 4 pages

This is to certify that the
Automatic Navigation and Track-keeping System, ANTS

with type designation(s)
VISION 2100 VT

Manufactured by
Litton Marine Systems
Charlottesville, Virginia 22901-2891,
United States

is found to comply with
Det Norske Veritas' Rules for Classification of Ships and Mobile Offshore Units

Application
Directional stable ships less than 150,000 GRT complying with IMO Res. A.751(18)

Place and date
Høvik, 2000-05-11
for DET NORSKE VERITAS AS

Per Martinsen
Head of Section

Local Office
DNV New Jersey

This Certificate is valid until
2002-06-30

Arve Lepsøe
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

Holder of certificate

Litton Marine Systems
Charlottesville, Virginia 22901-2891, United States

Product description

MK37 VT Gyro Compass
or C. Plath SR2100 Gyro Compass
or C. Plath MK-1 Gyro Compass
ADG 3000 VT Autopilot
SRD 331 Speed Log
or SRD 421 Dual-axis Speed Log
or SRD 500 Speed Log
Trimble NT200D DGPS receiver
or Trimble NT300D DGPS receiver
or Leica MX400 DGPS receiver
RASCAR VT ARPA Radar
or Bridgemaster E 340 ARPA Radar
Voyage Management System *consisting of*
- Navigation Station
- Conning Station
- Planning Station

Software version

VMS-VT ver.1812354N2

Application/Limitation

- The design approval encompasses system engineering including integration, interface and track-keeping performance.

- The approval is based on the assumption that all sub-systems listed above are individually type approved in compliance with IEC 60945 and pertinent performance standards. If a sub-system does not have a valid certificate it is subject to normal case-by-case design review and commisioning tests onboard. If a sub-system is replaced by another similar type approved system the interface is subject to normal case-by-case design review and commisioning tests onboard.

- The system installation is to be tested on board according to the following commissioning test procedure: *03956-SCM-25379 Validation Procedure for the ANTS*

- The system network protocol is TCP/ IP

- The system operating system is Windows NT release 4.0.

Type Approval documentation

- DWG No. 1820416 Automatic Navigation and Track-keeping System, Block Diagram
- DWG No. 03956-SCM-25380 ANTS List of Equipment
- 03956 SCM 25266 Rev A Software Requirements Specification for the UNS of VMS-VT
- P/N 200-26658 Rev B Software Requirements Specification for the Track-keeping algorithm of the VMS-VT
- JA26-5883 Rev N August 1999 Operator Manual for the VMS-VT
- JA25-5281 Interfacing, Installation and Service of the VMS
- 03956 SCM-25233 Software Test Plan for Ver. 2.1 of VMS-VT
- Software Test Protocol for the VMS-VT October 1999
- 03956 SCM-25288 Rev V config. Ini. For the VMS-VT

Tests carried out

Tests according to 03956 SCM-25233 Software Test Plan for Ver. 2.1 of VMS-VT and Software Test Protocol for the VMS-VT October 1999:
- Failure simulation conducted to evaluate error detection and pertinent fail-to-safe mode
- Functional tests conducted to evaluate the quality assurance of Voyage Planning
- Performance tests of the track-keeping software
- Functional tests of interface and communication protocol

Marking of product

See product description above.

Certificate retention survey

The scope of the retention/ renewal survey is to verify that the conditions stipulated for the type approval is complied with and that no alterations are made to the product design or choice of sub-systems.

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-6113
This Certificate consists of 3 pages

This is to certify that the
AUTOMATIC NAVIGATION AND TRACK-KEEPING SYSTEM, ANTS

with type designation(s)
VISION 2100 VT

Manufactured by
SPERRY MARINE INC.
1070 SEMINOLE TRAIL,
CHARLOTTESVILLE, VA 22901, U.S.A.

is found to comply with
DET NORSKE VERITAS' RULES FOR CLASSIFICATION OF SHIPS AND MOBILE OFFSHORE UNITS

Application

Directional stable ships less than 150,000 GRT complying with IMO Res. A.751(17)

Place and date
Høvik, 07. August 1996
for Det Norske Veritas AS

Olaf Gundersrud
Head of Section

DET NORSKE VERITAS * 1864 *

Local Office
DNV New Jersey

This Certificate is valid until
30. June 1998

Arvid Inge Stiansen
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-7589
This Certificate consists of 4 pages

This is to certify that the

Automatic Navigation and Track-keeping System, ANTS

with type designation(s)

VISION 2100 VT

Manufactured by

Litton Marine Systems
Charlottesville, Virginia 22901-2891,
United States

is found to comply with

Det Norske Veritas' Rules for Classification of Ships and Mobile Offshore Units

Application

Directional stable ships less than 150,000 GRT complying with IMO Res. A.751(17)

Place and date
Høvik, 2000-05-11
for DET NORSKE VERITAS AS

Per Martinsen
Head of Section

Local Office
DNV New Jersey

This Certificate is valid until
2002-06-30

Arve Lepsøe
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-7752
This Certificate consists of 4 pages

This is to certify that the

Electronic Chart Display and Information System (ECDIS)

with type designation

VISION 2100 ECDIS

Manufactured by

LITTON MARINE SYSTEMS INC.
1070 Seminole Trail
Charlottesville, VA 22901, U.S.A.

is found to comply with

- Performance standards for electronic chart display and information systems. (IMO Res. A.817(19))
- General requirements for shipborne radio equipment, (GMDSS) and for electronic navigational aids. (IMO Res. A.694(17))
- General requirements for electromagnetic compatibility for all electrical and electronic ship's equipment. (IMO Res. A.813(19))
- Code on Alarms and Indicators (IMO Res. A.686(17) and A.830(19)) as applicable
- IEC 61174 Ed. 1.0 (1998-08) Maritime navigation and radiocommunication equipment and systems - Electronic chart display and information system (ECDIS) - Operational and performance requirements, methods of testing and required test results
- IEC 60945 Ed. 3.0 (1996-11) Maritime navigation and radiocommunication equipment and systems - General requirements – Methods of testing and required test results
- IEC 61162-1 Ed. 1.0 (1995-11) Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 1: Single talker and multiple listeners

Place and date
Høvik, 2000-09-15
for DET NORSKE VERITAS AS

Per Martinsen
Head of Section

Local Office
DNV New Jersey

This Certificate is valid until
2002-12-31

Finn H. Spone
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

Cert. No.: A-7752
File No.: 847.50
Case No.: TAA3245

Holder of certificate

Litton Marine Systems Inc.
1070 Seminole Trail
Charlottesville, VA 22901, U.S.A.

Product description

VISION 2100 ECDIS consisting of the following components:

- PC: 1900646
- Monitor 21": 4300543
- Monitor 29": 1812582
- Trackball: 1813749
- Control panel: 1859985

Software modules:

• 1812354	VMS-VT	Ver. 4.1
• p/o 1812354	EC2007 ECDIS kernel	Ver. 4.6
• p/o 1812354	S52 Presentation Library	Ver. 3.1

Application/Limitation

- The operating system is Windows NT 4.0 release with Service Pack 5, Rev. 4.0.
- The ECDIS shall be supplied by an Uninterruptable Power Supply (UPS).
- The installation shall be tested onboard according to the following commissioning test procedure: EB4300617 ECDIS Workstation Installation Checkout.

Type Approval documentation

- VMS-VT Operators Manual, Doc. no. JA26-5883, Rev. P June-00
- VMS Installation drawings, Doc.no. 240-32029, Rev. 28-Aug-00
- Buzzer, Electrical, Doc.no. 1809133
- Interfacing, Installation and Service of the Voyage Management System, Doc. No. JA6-5884, Rev. Nov-96
- Configuring VMS-VT with ECDIS Standard, Doc. No. 03956_SCM25288, Rev. W
- VMS-VT NMEA I/O Specification, Doc. no. SCM-30300, Rev. 08-June-00
- Voyage Management System (VMS) Failure Mode and Effect Analysis, Doc. No. SCM-25576, Rev. 29-Jan-98
- Electronic Chart Updates, S57 Updates, VMS SIR: 4441
- Scheduled Maintenance, Doc. No. JA19-6917 Chapter 4

- Software Quality Assurance Plan for the Voyage Management System, Doc. No. 03956 SCM-25403, Rev. 8-May-96
- Software Change Control Process for the VMS-VT Software Development
- VMS Software Test Plan, Doc. no.03956-SCM-30306, Rev. June-00
- Test Report ECDIS Monitor Calibration 21" CRT Monitor, Doc. no. JA340-7045, Rev. 30-June-00
- Test Report ECDIS Monitor Calibration 29" CRT Monitor, Doc. no. JA340-7045, Rev. 30-June-00
- Environmental Test Report (PC), Whessoe Varec, File no. HP308, Rev. 27-July-99
- Environmental Test Report (21" CRT), Delta, Doc. no. K251002-3, Rev. 11-May-99
- Environmental Test Report (29" CRT), DERA, Doc. no. DERA/SS/CI/R/TT, Rev. 20/98/1.1
- Test Report Interfaces ECDIS Workstation, Doc. no. JA 240-7058, Rev. 31-Aug-00
- Test Report Serial Interfaces ECDIS Workstation, Doc. no. JA 240-7063, Rev. 31-Aug-00
- Confirmation on corrosion specification, Hatteland Inst. AS, JH21C03 M47 Data, Rev. 17-Aug-00
- Low emission verification, Semco, Doc. no. 98 20079/X
- Corrosion resistance of EDL display monitors, EDL, Rev. 22-Aug-00
- Type test of 29" EDL display, DERA Litt 20/98, Rev. 23-Aug-00

Tests carried out

- Performance testing, IEC 61174
- Environmental testing, IEC 60945
- Serial interface testing, IEC 61162-1

Marking of product

The mark "VISION 2100 ECDIS" shall appear on an equipment label to be applied to the equipment in a single visible location.

Certificate retention survey

The scope of the retention/ renewal survey is to verify that the conditions stipulated for the type approval are complied with and that no alterations are made to the product design or choice of systems, software versions, components and/ or materials.

The main elements of the survey are:

- Ensuring that type approved documentation is available.

- Inspection of factory samples, selected at random from the production line (where practicable).
- Reviewing of production and inspection routines, including test records from product sample tests and control routines.
- Ensuring that systems, software versions, components and/ or materials used comply with type approved documents and/ or referenced system, software, component and material specifications.
- Reviewing of possible changes in design of systems, software versions, components, materials and/ or performance, and make sure that such changes do not affect the type approval given.
- Ensuring traceability between manufacturer's product type marking and the type approval certificate.

The survey is to be performed at renewal of this certificate.

END OF CERTIFICATE

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-8576
This Certificate consists of 4 pages

This is to certify that the
Electronic Chart Display and Information System (ECDIS)

with type designation
VISION 2100 ECDIS
as listed on page 2

Manufactured by
Sperry Marine
Charlottesville, Virginia 22901-2891, United States

is found to comply with
Performance standards for electronic chart disply and information systems (IMO Res. A.817(19))
General requirements for shipborne radio equipment, (GMDSS) and for electronic navigational aids. (IMO Res. A.694(17))
General requirements for electromagnetic compatibility for all electrical and electronic ship's equipment (IMO Res. A.813(19))
IEC 60945 Ed. 3.0 (1996-11) Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results
Code on Alarms and Indicators (IMO Res. A.686(17) and A.830(19)) as applicable
IEC 61174 Ed. 1.0 (1998-08) Maritime navigation and radiocommunication equipment and systems - Electronic chart display and information system (ECDIS) - Operational and performance requirements, methods of testing and required test results
IEC 61162-1 Ed. 1.0 (1995-11) Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 1: Single talker and multiple listeners

Place and date
Høvik, 2002-11-28
for DET NORSKE VERITAS AS

Knut Svein Ording
Head of Section

DET NORSKE VERITAS * 1864 *

Local Office
DNV New Jersey

This Certificate is valid until
2003-12-31

Finn H. Spone
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

VISION 2100 ECDIS consisting of the following components:

- PC: 1900646
- Monitor 21": 4300543
- Monitor 29": 1812582
- Flat panel 18.1": 4301007-1
- Flat panel 20.1": 4301008-1
- Flat panel 23.1": 4301009-1
- Trackball: 1813749
- Control panel: 1859985

Software modules:

• 1812354	VMS-VT	Ver. 5.0
• p/o 1812354	EC2007 ECDIS kernel	Ver. 4.6
• p/o 1812354	S52 Presentation Library	Ver. 3.1

Application/Limitation

- The system operating system is Windows NT 4.0 release with Service Pack 5, Rev. 4.0.
- The ECDIS shall be supplied by an Uninterruptable Power Supply (UPS).
- The installation shall be tested onboard according to the following commissioning test procedure: EB4300617 ECDIS Workstation Installation Checkout.

Note

Reference has been made to parts related to display characteristics and monitor testing of IEC 61174 Ed.2 Martime navigation and radiocommunication equipment and systems – Electronic chart display and information system (ECDIS) – Operational and performance requirements, methods of testing and required test results.

Type Approval documentation

- VMS-VT Operators Manual, Doc. no. JA26-5883, Rev. P June-00
- VMS Installation drawings, Doc.no. 240-32029, Rev. 28-Aug-00
- Buzzer, Electrical, Doc.no. 1809133
- Interfacing, Installation and Service of the Voyage Management System, Doc. No. JA6-5884, Rev. Nov-96
- Configuring VMS-VT with ECDIS Standard, Doc. No. 03956_SCM25288, Rev. W
- VMS-VT NMEA I/O Specification, Doc. no. SCM-30300, Rev. 08-June-00

- Voyage Management System (VMS) Failure Mode and Effect Analysis, Doc. No. SCM-25576, Rev. 29-Jan-98
- Electronic Chart Updates, S57 Updates, VMS SIR: 4441
- Scheduled Maintenance, Doc. No. JA19-6917 Chapter 4
- Software Quality Assurance Plan for the Voyage Management System, Doc. No. 03956 SCM-25403, Rev. 8-May-96
- Software Change Control Process for the VMS-VT Software Development
- VMS Software Test Plan, Doc. no.03956-SCM-30306, Rev. June-00
- Test Report ECDIS Monitor Calibration 21" CRT Monitor, Doc. no. JA340-7045, Rev. 30-June-00
- Test Report ECDIS Monitor Calibration 29" CRT Monitor, Doc. no. JA340-7045, Rev. 30-June-00
- Environmental Test Report (PC), Whessoe Varec, File no. HP308, Rev. 27-July-99
- Environmental Test Report (21" CRT), Delta, Doc. no. K251002-3, Rev. 11-May-99
- Environmental Test Report (29" CRT), DERA, Doc. no. DERA/SS/CI/R/TT, Rev. 20/98/1.1
- Test Report Interfaces ECDIS Workstation, Doc. no. JA 240-7058, Rev. 31-Aug-00
- Test Report Serial Interfaces ECDIS Workstation, Doc. no. JA 240-7063, Rev. 31-Aug-00
- Confirmation on corrosion specification, Hatteland Inst. AS, JH21C03 M47 Data, Rev. 17-Aug-00
- Low emission verification, Semco, Doc. no. 98 20079/X
- Corrosion resistance of EDL display monitors, EDL, Rev. 22-Aug-00
- Type test of 29" EDL display, DERA Litt 20/98, Rev. 23-Aug-00
- ECDIS Monitor, LCD, test Procedure and Report, Doc.no. JA-240-8116, Rev. 6-Nov-01
- Delta test report K221785-1, 18.1" LCD Monitor
- Delta test report K221786-1, 20.1" LCD Monitor
- Delta test report K221789-1, 23.1" LCD Monitor

Tests carried out

- Performance testing, IEC 61174
- Environmental testing, IEC 60945
- Serial interface testing, IEC 61162-1

Marking of product

The mark "VISION 2100 ECDIS" shall appear on an equipment label to be applied to the equipment in a single visible location.

Certificate retention survey

The scope of the retention/ renewal survey is to verify that the conditions stipulated for the type approval are complied with and that no alterations are made to the product design or choice of systems, software versions, components and/ or materials.

The main elements of the survey are:

- Ensuring that type approved documentation is available.
- Inspedtion of factory samples, selected at random from the production line (where practicable).
- Reviewing of production and inspection routines, including test records from product sample tests and control routines.
- Ensuring that systems, software versions, componenets and/ or materials used comply with type approved documents and/ or referenced system, software, componenet and material specifications.
- Reviewing of possible changes in design of systems, software versions, components, materials and/ or performance, and make sure that such changes do not affect the type approval given.
- Ensuring traceability between manufacturer's product type marking and the type approval certificate.

The survey is to be performed at renewal of this certificate.

END OF CERTIFICATE

Sperry Marine

We Navigate Solutions.

Go Back

Module B for: NAVIECDIS
Issuing Country: United Kingdom
Issuing Agency: Maritime & Coastguard Agency
Date of Issue: 23 December 2003
Notes: Cert. # QQ -MED-55/03-01 Expiration: 22 December 2008

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

QinetiQ

NOTIFIED BODY No 0191

CERTIFICATE OF TYPE APPROVAL

(EC Certificate of Type Examination - Module B)
(Marine Equipment Directive - 96/98/EC)

Applicant:-
Sperry Marine
1070 Seminole Trail
Charlottesville
VA 22901
USA.

Manufacturer:-
Sperry Marine
1070 Seminole Trail
Charlottesville
VA 22901
USA.

This is to certify that the applicant has submitted details of a:-

Electronic Chart Display And Information System (ECDIS)
With Backup, and Raster Chart Display System
(COMMISSION DIRECTIVE 2002/75/EC – ITEM A.1/4.30)

Of system type known and designated as:-

Sperry Marine VMS - NAVIECDIS

(Comprising component parts and having technical characteristics shown in shedule 1)

and that these have been assessed, tested and when used in a combination of component parts as described in the attached schedules, is CERTIFIED as complying with the relevant parts of:

BS EN 61174:2002, "Electronic Chart Display And Information System (ECDIS)"
BS EN 60945 : 1997 "General Requirements for Marine Navigation Equipment"

(being specifications for Technical Characteristics and Methods of measurements equivalent to IEC 61174 and IEC 945), and published by the British Standards Institute.

It is also RECOGNISED that the equipment conforms to performance standards not inferior to those adopted by the International Maritime Organisation, and which are contained in Resolution MSC64(67), Annex 5, MSC86(70), Annex 4 and Resolution A694(17).

DATE of ISSUE: 23rd December 2003

details of any such modifications have been submitted to, and accepted by QinetiQ.

Notified Body 0191

Technical Characteristics

PARAMETER	PROVISION	COMMENT
DISPLAYED CHART AREA	355x351mm 303x318mm 285x299mm	23.1" Colour Liquid Crystal Display (LCD). 20.1" Colour Liquid Crystal Display (LCD). 19" Colour Liquid Crystal Display (LCD).
IEC 61162-1 SERIAL (NMEA) PORTS	Listner 4 Talker 4	Conformity to IEC 61162-1:2000 and IEC 61162-2:1998. The 4 'com' ports can be extended by the External Serial Package (ESP) to 20 ports in total (PN 4801162-5)
RADAR Video (Radar overlay) Port	1 Channel	Declared as suitable for the Sperry Bridgemaster E series radar. Tested with a 250mm Bridgemaster E, X-Band.
Back-Up Arrangements	Via Ethernet link to 2nd ECDIS	A second NAVIECDIS running software as listed above can be used as back-up.
TEMPERATURE RANGE Protected & IEC 945 CLASS Exposed	-15°C to +55°C. -25°C to +70°C	— All units — None
POWER SOURCE	100-120V or 200-240V AC 50-60Hz	Provision of Uninterruptible power supply unit to provide for short term operation and controlled shut-down on power failure is a contract requirement.

Conditions of Issue of this certificate are printed the reverse of this sheet.

QinetiQ
Fraser Range
Fort Cumberland Road, Eastney
Portsmouth, Hampshire. PO4 9LJ

Certificate Number ***QQ-MED-55/03-01***

QinetiQ/SPS/FRG/MTA/MED/002/1.1
Sheet 2 of 2

Sperry Marine
We Navigate Solutions

Go Back

Module B for: NAVIECDIS
uing Country: United Kingdom
uing Agency: QinetiQ
te of Issue: 06 March 2006
otes: Certificate No. QQ-MED-55/03-01R2 Expiration: 12/22/2008

Print this Type Approval
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(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Qineti

NOTIFIED BODY
No 0191

CERTIFICATE OF TYPE APPROVAL

(EC Certificate of Type Examination - Module B)
(Marine Equipment Directive - 96/98/EC)

Applicant:-
Sperry Marine
1070 Seminole Trail
Charlottesville
VA 22901
USA.

Manufacturer:-
Sperry Marine
1070 Seminole Trail
Charlottesville
VA 22901
USA.

This is to certify that the applicant has submitted details of a:-

Electronic Chart Display And Information System (ECDIS)
With Backup, and Raster Chart Display System
(COMMISSION DIRECTIVE 2002/75/EC – ITEM A.1/4.30)

Of system type known and designated as:-

Sperry Marine VMS / NAVIECDIS

(Comprising component parts and having technical characteristics shown in shedule

and that these have been assessed, tested and when used in a combination of component described in the attached schedules, is CERTIFIED as complying with the relevant parts of:

BS EN 61174:2002, "Electronic Chart Display And Information System (ECDIS)"
BS EN 60945 : 1997 "General Requirements for Marine Navigation Equipment"

(being specifications for Technical Characteristics and Methods of measurements equivaler 61174 and IEC 945), and published by the British Standards Institute.

Notified Body 0191

It is also RECOGNISED that the equipment conforms to performance standards not infe adopted by the International Maritime Organisation, and which are contained in Resolutio Annex 5, MSC86(70), Annex 4 and Resolution A694(17).

SIGNED: P J Goddard **DATE of ISSUE:** 23rd December 2003

DATE of EXPIRY : 22nd December 2008

P J Goddard Authorised Signatory **Certificate Number:** QQ-MED-55/03-01

This Certificate is Valid until expiry date shown, subject to the standard conditions of issue printed on the attached schedule
Sperry Marine are Module D registered with QinetiQ, ref; Certificate DQAS-11/03-SMI001 & Condition 3.

QinetiQ
Fraser Range
Fort Cumberland Road, Eastney
Portsmouth, Hampshire. PO4 9LJ

Maritime and Coastguard Agency
The MCA is an Executive Agency of the Department of Transport, Local Government and the Regions

Under the terms of the United Kingdom Statutory Instrument, No 1957 : 1999, the QinetiQ Group PLC (formerly known as DERA) has been Notified to the European Commission by the Maritime and Coastguard Agency as a Body authorised to conduct Conformity Assessment procedures under the provisions of the European Council Directive 96/98/EC on Marine Equipment and issue Certificates of Type Approval.

QinetiQ/SPS/FRG/MTA/MED/002/1.1
Sheet 1 of 2

Certificate of Type Approval - Schedule 1
Sperry VMS - NAVIECDIS

The applicant declared that the following units when combined form an operational Marine ECDIS equipment. The units below have been assessed & tested and satisfactory details of these units were included in the technical file. These units form systems consistent with the Item Description A1/4.30, given in Annex A1 of Directive 2002/75/EC .

MAIN UNITS [*1, 2, 3] Comprising:-				
Marine Computer Kit (inc. Keyboard)		4301231 or 4301238 Or 4301424-§		[*4]
Monitor CRT 21"		4300577-§		[*4]
or Display TFT23"		4301009-§		[*4]
or Display TFT20.1"		4301008-§		[*4]
or Display TFT19"		4301665-§		[*4]
Joystick kit or Trackball PS2		4301239-§ or 4301999-§		[*4]
SOFTWARE:		*Version*		
ECDIS w/o steering		V6.5		[*5]
ECDIS kernel		V5.0		[*5]
S52 Presentation Library		V3.2		[*5]
OPTIONAL UNITS:				
Radar Overlay	1813988	Analog assembly	1982776-§	[*4]
Network Kit	4500216-§[*4]	Alarm Relay	4600399	

End of List

NOTES:-

1. The Sperry NAVIECDIS is a kit form assembly comprising modular units shown which are integrated into a ship control console provided on the bridge by the shipyard.
2. A second ECDIS composed of the units above is needed to form a back-up system if this is required by carraige requirements and the Administration concerned.
3. An Uninterruptible Power supply must be incorporated and Sperry Marine contract conditions for the installation allow for this to be provided by the shipyard or the Sperry PN 4300749-§ UPS may be used.
4. The symbol § is shown where a number suffix is used to indicate a minor variant.
5. This approval is valid for equipment including subsequent minor software amendments where written

SIGNED: P J Goddard

P J Goddard Authorised Signatory

DATE of ISSUE: 6th March

DATE of EXPIRY : 22nd Dece

Certificate Number: QQ-MED-

EU/USCG Mutual Recognition Agreement
Council Decision 2004/425/EC

This equipment category is not yet covered by

This Certificate is Valid until expiry date shown, subject to the standard conditions of issue printed on the attached schedule Sperry Marine Inc. are Module D registered with QinetiQ in accord with standard condition 3, ref Certificate DQAS-11/03-SMI001

QinetiQ
Cody Technology Park
Ively Road, Farnborough
Hampshire. GU14 0LX

Maritime and Coast
The MCA is an Exec
the Department fc

Under the terms of the United Kingdom Statutory Instrument, No 1957 : 1999, the QinetiQ Group PLC (formerly known as t Notified to the European Commission by the Maritime and Coastguard Agency as a Body authorised to conduct Conform procedures under the provisions of the European Council Directive 96/98/EC on Marine Equipment and issue Certificates of

QinetiQ/SPS/TRG/MTA/MLD/002/1.1
Sheet 1 of 2

Certificate of Type Approval - Schedule 1
Sperry VMS - NAVIECDIS

The applicant declared that the following units when combined form an operational Marine equipment. The units below have been assessed & tested and satisfactory details of these u included in the technical file.. These units form systems consistent with the Item Description given in Annex A1 of Directive 2002/75/EC .

MAIN UNITS *2, 3, 5 Comprising:-		
Marine Computer Kit (inc. Keyboard)	4301231 or 4301238 Or 4301424-§	*4
Monitor CRT 21"	4300577-§	*4
or Display TFT23"	4301009-§	*4
or Display TFT20.1"	4301008-§	*4
or Display TFT19"	4301665 §	*4
or FST Glass front 19"	4302792-1	
or FST Glass front 23"	4302482-1	
Joystick kit or Trackball PS2	4301239-§ or 4301999-§	*4
SOFTWARE:	*Version*	
ECDIS	V7.3	*5
ECDIS kernel	V5.0	*5
S52 Presentation Library	V3.2	*5

OPTIONAL UNITS:

Radar Overlay	1813988	Analog assembly	1982776-§	*4
Network Kit	4500216-§*4	Alarm Relay	4600399	

---------- End of List----------

NOTES:

1. The Sperry NAVIECDIS is a kit form assembly comprised of modular units shown which are integrated in control console provided on the bridge by the shipyard.
2. A second ECDIS composed of the units above is needed to form a back-up system if this is required by requirements and the Administration concerned.
3. An Uninterruptible Power supply must be incorporated as Sperry Marine contract conditions for the allow for this to be provided by the shipyard or the Sperry PN 4302749-§ UPS may be used.
4. The symbol § is shown where a number suffix is used to indicate a minor variant.
5. This approval is valid for equipment including subsequent minor software amendments where writte such modifications have been submitted to, and accepted by QinetiQ.
6. A modular extension is available to form a 'Track Control System' in conjunction with the Sperry NAVI Heading control Autopilot, this is separately certified. Please refer to certificate number QQ-MED-32/0

Notified Body 0191

Technical Characteristics

PARAMETER	PROVISION	COMMENT
DISPLAYED CHART AREA	355x 351mm 303x 318mm 285x 299mm	23" Colour Liquid Crystal Display (LCD). 20.1" Colour Liquid Crystal Display (LCD). 19" Colour Liquid Crystal Display (LCD)
IEC 61162-1 SERIAL (NMEA) PORTS	Listner 4 Talker 4	Conformity to IEC 61162-1:2000 and IEC 61162 The 4 'com' ports can be extended by the Exter

		Package (if any) to 20 ports in total (P/N 4003 102-
RADAR Video (Radar overlay) Port	1 Channel	Declared as suitable for the Sperry Bridgemaste radar. Tested with a 250mm Bridgemaster E, X-
Back-Up Arrangements	Via Ethernet link to 2^nd ECDIS	A second NAVIECDIS running software as listed can be used as back-up
TEMPERATURE RANGE Protected & IEC 945 CLASS Exposed	-15°C to +55°C. -25°C to +70°C	- All units — None
POWER SOURCE	100-120V or 200-240V AC 50-60Hz	Provision of Uninterruptible power supply unit provide for short term operation and controlled down on power failure is a contract requiremen

Conditions of Issue of this certificate are printed the reverse of this sheet.

QinetiQ
Cody Technology Park
Ively Road, Farnborough
Hampshire. GU14 0LX

Certificate Number *QQ-M*

QinetiQ/SPS/TRG/MTA/MED/002/1.1
Sheet 2 of 2

Reverse of last sheet

Certificates of Type Approval
Conditions of Issue

1. Each Certificate will be used in its entirety and not reproduced in part.

2 This certificate remains valid until the date shown (normally 5 years) unless cancelled or revoked,

i) the design and manufacture remain unmodified from the specimen tested and record Construction File;

ii) any conditions contained in the schedule are complied with;

iii) the equipment remains satisfactory in service and the regulations and standards cited i Directives do not change.

3. The mark of conformity may only be affixed to the equipment listed on this certificate and Declaration of Conformity issued when the production Quality Assurance requirements laid dowr Directive (96/98/EC) is fully complied with and controlled by a written inspection agreement with

The use of the QinetiQ Notified Body Number (0191) in combination with the Wheelmarl manufacturer is Registered with the QinetiQ Quality Assurance Scheme. A Certificate of Registrat manufacturer and should be made available on request. The manufacturer is responsible for en renewal and surveillance are maintained.

4. This certificate does not confer any approval status to this equipment other than defined by, and to the specifications listed on sheet 1.

5. The labelling requirements of IMO Resolution A694(17) shall be met. Descriptions of ach unit of part of the equipment will be as given on this Certificate. Each unit of equipment will be marked safe distance at which it should be mounted from a standard and steering magnetic compass.

6. No unit of apparatus shall be advertised or labelled as "approved" or "certified" on behalf of Coastguard Agency, the Department of Transport or the QinetiQ Group in any sense other than t has been assessed as satisfactory against the specification;

7 The manufacturer must advise QinetiQ of any intended changes to the design or production which might affect the equipment performance.

8 Minor Modifications to the equipment will be considered on a case-by-case basis. QinetiQ will test results, in consultation if necessary, with the test facility that conducted the original Type A the equipment. QinetiQ will advise the manufacturer if any further testing is required certification.

9 If an equipment manufacturer wishes to have the type approved equipment designated under (e.g. agent/distributor's name and model number), a separate application should be completed a

QinetiQ Ltd
Marine Approval and Testing Service
Cody Technology Park, Room 1005/A5
Ively Road, Farnborough
Hants, GU14 0LX
United Kingdom

QinetiQ/SPS/TRG/MTA/MED/002/1.1